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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BOX PATENT APPLICATION
Assistant Commissioner for Patents
Washington, D.C. 20231

APPLICATION TRANSMITTAL LETTER

Transmitted herewith for filing under 35 U.S.C. §111(a) and 37 C.F.R. § 1.53(b) is a new utility patent application of:

Inventor(s): Jay S. WALKER, Andrew S. VAN LUCHENE and Dean ALDERUCCI

For: METHOD AND APPARATUS FOR CONTROLLING THE PERFORMANCE OF A SUPPLEMENTAL PROCESS AT A POINT-OF-SALE TERMINAL

☒ This application is a: ☐ CONTINUATION
☒ CONTINUATION-IN-PART
☐ DIVISIONAL

of prior application no.: 08/920,116, filed August 26, 1997, which is a continuation-in-part of prior application no 08/822,709 , filed March 21, 1997; and is a continuation-in-part of prior application no. 08/841,791, filed May 5, 1997.

☒ With respect to the inventorship of the co-pending parent application, from which this application claims benefit under 35 U.S.C. §120, the inventor(s) in this application is (are) less than those named in the copending parent application and the following inventor(s) should be deleted from this application:

Inventor(s) James A. JORASCH and Sanjay K. JINDAL

Papers Enclosed:
Enclosed are:

X	20 Page Application, including 8 pages of claims and 1 page of Abstract
X	7 Sheets of drawing(s)/Formal Figs. 1-7
X	Express Mail Certificate
To Follow	An Assignment of the invention to Walker Asset Management Limited Partnership with recordation cover sheet
To Follow	Verified Statement Claiming Small Entity Status
	Information Disclosure Statement, PTO-1449 and cited references
X	Combined Declaration and Power of Attorney (unexecuted)
	Preliminary Amendment
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BASIC FEE				$395	OR		$790
TOTAL CLAIMS	36 -20 =	16	X $11 =	$176	OR	X$22 =	$0
INDEPENDENT CLAIMS	20 -3 =	17	X $41 =	$697	OR	X$82 =	$0
MULTIPLE DEPENDENT CLAIM PRESENTED: 0			X$135 =	$0	OR	X$260 =	$0
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Respectfully submitted,
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Dated: March 20, 1998

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Dated: March 20, 1998

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METHOD AND APPARATUS FOR CONTROLLING THE PERFORMANCE OF A SUPPLEMENTARY PROCESS AT A POINT-OF-SALE TERMINAL

The present application is a continuation-in-part application of (i) co-pending Patent Application No. 08/920,116, entitled METHOD AND SYSTEM FOR PROCESSING SUPPLEMENTARY PRODUCT SALES AT A POINT-OF-SALE TERMINAL, filed on August 26, 1997, which is a continuation-in-part of co-pending Patent Application No. 08/822,709, entitled SYSTEM AND METHOD FOR PERFORMING LOTTERY TICKET TRANSACTIONS UTILIZING POINT-OF-SALE TERMINALS, filed on March 21, 1997; and (ii) co-pending Patent Application No. 08/841,791, entitled METHOD AND APPARATUS FOR SELLING SUBSCRIPTIONS TO PERIODICALS IN A RETAIL ENVIRONMENT, filed on May 5, 1997, each of which are incorporated herein by reference.

CROSS REFERENCE TO CO-PENDING APPLICATIONS

The present invention is related to the following United States Patent Applications filed contemporaneously herewith:

U.S. Patent Application Ser. No. _____, entitled METHOD AND APPARATUS FOR FACILITATING THE PLAY OF FRACTIONAL LOTTERY TICKETS UTILIZING POINT-OF-SALE TERMINALS (Attorney Docket No. WD2-97-558), U.S. Patent Application Ser. No. _____, entitled METHOD AND APPARATUS FOR PROCESSING A SUPPLEMENTARY PRODUCT AT A POINT-OF-SALE TERMINAL (Attorney Docket No. WD2-97-561), U.S. Patent Application Ser. No. _____ entitled METHOD AND APPARATUS FOR CONTROLLING OFFERS THAT ARE PROVIDED AT A POINT-OF-SALE TERMINAL (Attorney Docket No. WD2-97-564), and U.S. Patent Application Ser. No. _____, entitled METHOD AND APPARATUS FOR PROCESSING A SUPPLEMENTARY PRODUCT SALE AT A POINT-OF-SALE TERMINAL (Attorney Docket No. WD2-97-559), each assigned to the assignee of the present invention and incorporated by reference herein.

FIELD OF THE INVENTION

The present invention relates to point-of-sale terminals, and, more specifically, to methods and apparatus for controlling the performance of supplementary processes at point-of-sale terminals.

BACKGROUND OF THE INVENTION

Point-of-sale ("POS") terminals, such as cash registers, are used in a wide variety of businesses for performing such processes as calculating the total price of a purchase (goods or services) and calculating the amount of change due to a customer. Some POS terminals furthermore track items sold and adjust a database of store inventory accordingly.

A POS terminal may perform a supplementary process in addition to performing the processes listed above. A supplementary process can increase sales, and thereby increase the average profit gained per transaction. One such supplementary process is described in a parent application of the present application, Patent Application No. 08/920,116, entitled METHOD AND SYSTEM FOR PROCESSING SUPPLEMENTARY PRODUCT SALES AT A POINT-OF-SALE TERMINAL, filed on August 26, 1997. Described therein is a supplementary process in which a customer at a POS terminal is offered an "upsell" in exchange for an amount of change due. The POS terminal determines an upsell in dependence on a purchase of the customer, and also determines an upsell price (the amount of change due) based on the purchase. For example, a customer purchasing a first product for $1.74 and tendering $2.00 may be offered a second product in lieu of the $0.26 change due. The upsell price, $0.26, thus depends on the purchase price $1.74.

Another supplementary process is a computer-determined "suggestive sell". U.S. Patent No. 5,353,219 describes a system for suggesting items for a customer to purchase from a primary category at conventional item prices. Still another supplementary process is described in a parent application of the present application, Patent Application No. 08/841,791, entitled METHOD AND APPARATUS FOR SELLING SUBSCRIPTIONS TO PERIODICALS IN A RETAIL ENVIRONMENT, filed on May 5, 1997. Described therein is a supplementary process

in which a customer purchasing an issue of a periodical at a POS terminal is offered the opportunity at that time to purchase a subscription to that periodical.

Such supplementary processes may be performed solely within the POS terminal itself. For example, a cash register may be programmed to calculate an amount of change due, and determine an upsell to offer in exchange for the change due. Alternatively, the supplementary process may be performed with the assistance of a device in communication with the cash register. For example, a remote server computer connected to the cash register via a communications network may determine an upsell to offer in exchange for the change due.

A supplementary process performed at a POS terminal may undesirably slow the rate at which customer transactions are completed. For example, it may take several seconds for a cashier operating a POS terminal to offer a customer an upsell in exchange for an amount of change due, and for the customer to decide whether to accept such an offer. Offering a customer a choice of several upsells in exchange for an amount of change due could impose yet further delays on completing customer transactions.

Such delays may be acceptable under some conditions, yet unduly burdensome under other conditions. For example, during lunch or other times of day, there may be a long line at a POS terminal. It would be inadvisable to add to the wait of each customer in line by performing a supplementary process as well. However, eliminating the supplementary processes may speed the completion of customer transactions, but at the cost of the extra profit derived from such supplementary processes. Accordingly, a need exists for controlling the performance of supplementary processes at POS terminals.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a method and apparatus for controlling the performance of a supplementary process at a point-of-sale terminal.

In accordance with the present invention, one or more POS terminals measure one or more criteria, such as the activity rate of the POS terminal. For example, the POS terminal may measure the number of completed transactions per period of time, the number of items purchased through the POS terminal per period of time, the number of upsells accepted by customers per period of time, the number of customers in a store or the number of customers in the vicinity of the POS terminal. The POS terminal in turn compares the measured criteria with a

predetermined threshold. Based on the results of the comparison, the POS terminal determines whether to perform a supplementary process. For example, the POS terminal may perform the supplementary process only if the number of transactions per minute is less than a predetermined threshold.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic illustration of a POS terminal provided in accordance with the present invention.

FIG. 2 is a schematic illustration of another embodiment of the POS terminal of FIG. 1.

FIG. 3 is a flow chart illustrating a method provided in accordance with the present invention for controlling the performance of a supplementary process at a POS terminal.

FIG. 4 is a table illustrating an offer schedule that depends on an activity rate of a POS terminal.

FIG. 5 is a schematic illustration of an override decision manager of the POS terminal of FIG. 2.

FIG. 6 is a schematic illustration of a network of POS terminals.

FIG. 7 is a table illustrating an offer schedule that depends on an activity rate of a plurality of POS terminals.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Applicants have recognized that supplementary processes performed by POS terminals may introduce delays in the completion of customer transactions, and that these delays may be acceptable under certain circumstances. For example, when there are few pending customer transactions, such delays do not significantly affect relevant measures of performance such as sales per hour or profit per hour.

Accordingly, performing supplementary processes during periods of low activity, yet reducing or refraining from supplementary processes during periods of high activity, can result in increased profit. Such increased profit can exceed the profit of POS terminals that either always perform the supplemental process or never perform the supplemental process.

In one embodiment of the present invention, a POS terminal measures one or more criteria, such as an activity rate of a terminal, and performs a supplementary process if the

criteria are less than predetermined thresholds. In another embodiment, a POS terminal measures an activity rate of a terminal, determines an offer schedule in accordance with the activity rate, and in turn provides a supplementary product offer in accordance with the offer schedule. The offer schedule may specify that time-consuming offers (offers with a low "offer speed") are made during periods of low terminal activity, while quicker offers (offers with a high "offer speed") are made during periods of higher terminal activity.

It is particularly desirable to provide an offer to exchange spare change due for an upsell, as described in the aforementioned parent application, Application No. 08/920,116. Accordingly, the present invention contemplates providing offers for upsells having high performance rates. In addition, the present invention contemplates providing offers for different upsells in accordance with an offer schedule.

Referring to FIG. 1, a POS terminal 10, which may be the IBM 4683 or IBM 4693 manufactured by International Business Machines, comprises a processor 12, such as one or more conventional microprocessors. The processor 12 is in communication with a data storage device 14, such as an appropriate combination of magnetic, optical and/or semiconductor memory. The processor 12 and the storage device 14 may each be (i) located entirely within a single computer or other computing device; (ii) connected to each other by a remote communication medium, such as a serial port cable, telephone line or radio frequency transceiver; or (iii) a combination thereof. For example, the POS terminal 10 may comprise one or more computers which are connected to a remote server computer for maintaining databases.

An input device 16 preferably comprises a keypad for transmitting input signals, such as signals indicative of a purchase, to the processor 12. A printer 18 is for registering indicia on paper or other material, thereby printing receipts, coupons and vouchers as commanded by the processor 12. A display device 20 is preferably a video monitor for displaying at least alphanumeric characters to the customer and/or cashier. Many types of input devices, printers and display devices are known to those skilled in the art, and need not be described in detail herein. The input device 16, printer 18 and display device 20 are each in communication with the processor 12.

A sensor 22 is also in communication with the processor 12. The sensor 22 and processor 12 may be used to measure, for example, the number of customers entering a store or

the number of customers in the vicinity of the POS terminal 10. Many other types of sensors are known and need not be described in detail herein.

The storage device 14 stores a program 24 for controlling the processor 12. The processor 12 performs instructions of the program 24, and thereby operates in accordance with the present invention, and particularly in accordance with the methods described in detail herein. The program 24 furthermore includes program elements that may be necessary, such as an operating system and "device drivers" for allowing the processor to interface with computer peripheral devices, such as the input device 16, the printer 18, the display device 20 and the sensor 22. Appropriate device drivers and other necessary program elements are known to those skilled in the art, and need not be described in detail herein.

FIG. 2 illustrates another embodiment of the POS terminal 10 of FIG. 1, in which a control device 28 is in communication via a communication medium 30 with a system 32 for providing a supplementary process. The control device 28 comprises a processor 34 in communication with the input device 16 and the display device 20. The system 32 for providing a supplementary process comprises a processor 36 in communication with the storage device 14, the printer 18 and the sensor 22. In this embodiment, the control device 28 may be a cash register, and the system 32 may be an electronic device connected thereto for printing coupons in accordance with data received from the cash register. Other configurations of the POS terminal 10 will be understood by those skilled in the art.

Referring to FIG. 3, a method 40 for controlling the performance of a supplementary process initiates with the POS terminal 10 of FIGS. 1 and 2 measuring one or more criteria, such as the activity rate of the POS terminal 10 (step 42). For example, the POS terminal 10 may measure the number of completed transactions per time (transaction rate), the number of items purchased through the POS terminal 10 per period of time (item sale rate), or the number of upsells accepted by customers per period of time (upsell acceptance rate). The POS terminal 10 may measure the number of customers, such as the number of customers in a store or the number of customers in the vicinity of the POS terminal 10, through input signals received from the sensor 22. Many other types of measurements may be made by the POS terminal 10.

The POS terminal 10 then determines, based on the measured activity rate or other criteria, whether to perform a supplementary process, such as offering an upsell in exchange for change due. In one embodiment, the POS terminal 10 compares the activity rate to a

predetermined threshold. Such a threshold may be determined (step 44) in a number of ways. For example, the threshold may be a predetermined value (e.g. a rate of three transactions per minute), or a variable value (e.g., three transactions per minute after 5:00 PM, two transactions per minute otherwise). Many methods of calculating thresholds, based on many variables such as time of day and day of the week, will be understood by those skilled in the art.

Once the threshold is determined, the activity rate is compared to the predetermined threshold (step 46). One comparison is to determine whether the activity rate is less than the threshold. For example, the POS terminal 10 may determine whether the measured number of completed transactions in the last ten minutes is less than a predetermined threshold of seven transactions per ten minute period.

If the comparison is valid, (e.g., the measured activity rate is less than the threshold), then the POS terminal 10 performs the supplementary process (step 48). The POS terminal 10 may perform the supplementary process by executing instructions of the program 24 (FIG. 1). Alternatively, the POS terminal 10 may perform the supplementary process by sending control signals from the control device 28 (FIG. 2) to the system 32 for providing a supplementary process. In such an embodiment, the control device 28 determines whether to enable or disable the system 32. For example, the control device 28 may disable the system 32 if the activity rate is greater than a predetermined threshold, and enable the system 32 if the activity rate is less than the predetermined threshold. The control device 28 may enable and disable the system 32 by transmitting thereto appropriate enable signals and disable signals. Such signals may be control signals, which serve only to enable or disable the performance of the supplementary process, or may be data signals, which contain additional information for use by the system 32. Instead of separate enable and disable signals, the control device 28 may transmit to the system 32 a signal that toggles the system 32 between an enabled mode and a disabled mode.

It will be understood by those skilled in the art that the system 32 may alternatively be "enabled-until-disabled". In other words, the control device 28 would only need to transmit a disable signal when the supplementary process is not to be performed. When no disable signal is transmitted to the system 32, the system 32 would perform the supplementary process (even if no enable signal is received). Similarly, the system 32 may be "disabled-until-enabled". In other words, the control device 28 would only need to transmit an enable signal when the supplementary process is to be performed. When no enable signal is transmitted to the system

32, the system 32 would not perform the supplementary process (even is no disable signal is received).

As an illustration of the above-described method 40, the POS terminal may measure an activity rate, and determine if the activity rate is less than a predetermined threshold. If so, the POS terminal then determines an upsell in dependence on a purchase, as described in a parent application of the present application, Patent Application No. 08/920,116, entitled METHOD AND SYSTEM FOR PROCESSING SUPPLEMENTARY PRODUCT SALES AT A POINT-OF-SALE TERMINAL, filed on August 26, 1997. The POS terminal further determines an upsell price in dependence on the purchase, and offers the customer an upsell in exchange for the upsell price.

In the above-described embodiments, the POS terminal 10 determines whether a supplementary process is or is not performed. In other embodiments, the POS terminal 10 may further select a supplementary process based on the measured activity rate or other criteria. For example, it may be desirable that different types of offers are provided to customers depending on the activity rate of the POS terminal. In particular, more time-consuming offers are provided when the measured activity rate is low, while quicker offers are provided when the measured activity rate is high.

FIG. 4 is a table 60 that illustrates an offer schedule, which may be implemented as a database stored on the storage device 14 in a manner well known in the art. Each row of the table 60 represents an entry, and each entry defines an upsell to offer for an activity rate. In particular, each entry includes an activity rate identifier 62 that uniquely identifies the entry, an activity rate 64 which describes a rate or range of rates, and an upsell to offer 66 at that activity rate. As described in Patent Application No. 08/920,116, the upsell to offer 66 may include two or more upsells which are offered one at a time until an upsell is accepted.

An entry 68, corresponding to activity rates less than eight transactions per fifteen-minute period, indicates that an additional product is to be offered during these (relatively low) activity rates. Additional product offers typically have low "offer speeds", since it may be several seconds for a cashier to retrieve the additional product if the offer is accepted by the customer. An entry 70, corresponding to activity rates between eight and fifteen transactions per fifteen-minute period, indicates that a "triple-your-change" coupon is to be offered during these activity rates. Typically, printing a coupon is quicker than offering an additional product. A coupon

offer thus has a higher offer speed, which is why a coupon is to be offered during periods of higher terminal activity. An entry 72 indicates that no offer is to be provided at activity rates greater than fifteen transactions per fifteen-minute period.

The above embodiments describe how the POS terminal automatically controls the performance of a supplementary process. It may further be desirable to provide a method and apparatus to, at times, counteract such automatic control. Allowing a manual override of the decision of the POS terminal would provide even finer control over the performance of the supplementary process. For example, a store manager may wish to test the supplementary process, even though the POS terminal is not currently performing the supplementary process. In addition, there may be certain situations, which a device cannot accurately account for, in which a supplementary process should not be performed.

Referring to FIG. 5, an apparatus 80 includes an override decision manager 82 which receives input from an override signal circuit 84 and from an automatic control signal circuit 86. The override signal circuit 84 is a device that provides an override signal, such as a switch in communication with the POS terminal. The override signal circuit 84 may be one or more keys on the input device 16 (FIGS. 1 and 2), or may be another device that transmits and/or generates signals. The automatic control signal circuit 86 is the portion of the POS terminal that provides the control signal for controlling automatic performance of the supplementary process, as described above. The override decision manager 82 receives the override signal and control signal from circuits 84 and 86, respectively, and generates in dependence thereon an "enhanced control" signal for controlling performance of the supplementary process. The enhanced control signal is transmitted to a system 88 for performing a supplementary process. The system 88 may be a software module which is a component of the POS terminal 10 of FIG. 1, or may be the system 32 for providing a supplementary process of FIG. 2.

The override signal may be used to counteract the performance of the supplementary process that would have otherwise occurred in accordance with the control signal from the automatic control signal circuit 86. Referring to Table 1 below, the Truth Table shown describes the output (Enhanced Control Signal) as a function of the inputs (Override Signal and Control Signal). Table 1 describes an embodiment where the override signal may attain one of two values (i.e., 0 or 1). However, those skilled in the art will understand that the override signal may attain more than two values.

Override Signal	Control Signal	Enhanced Control Signal
0	0	0
0	1	1
1	0	0
1	1	0

where:

Override Signal = 0 for Allowing Automatic Control

Override Signal = 1 for Disabling the Supplemental Process

Control Signal = 0 for Disabling the Supplemental Process

Control Signal = 1 for Enabling the Supplemental Process

Enhanced Control Signal = 0 for Disabling the Supplemental Process

Enhanced Control Signal = 1 for Enabling the Supplemental Process

TABLE 1 – Truth Table for Override Decision Manager

For example, when Override Signal = 1 and Control Signal = 1, then a user is overriding the automatic determination to enable the supplemental process. Accordingly, the Enhanced Control Signal = 0, and the supplemental process is disabled.

Referring to FIG. 6, a network 100 includes a server computer 102 in communication with POS terminals 104, 106 and 108. The server computer 102 may itself be a POS terminal, as described above. Although three POS terminals are shown in FIG. 6, any number of POS terminals may be in communication with the server computer 102 without departing from the spirit and scope of the present invention. The server computer 102 may perform many of the above-described processes, especially those processes which are performed for more than one POS terminal. For example, the server computer 102 may (i) measure the activity rate of any or all of the POS terminals 104, 106 and 108, (ii) determine whether to provide a supplementary process at any or all of the POS terminals 104, 106 and 108, (iii) enable or disable one or more

systems for providing a supplementary process, and/or (iv) transmit an override signal to any or all of the POS terminals 104, 106 and 108. The server computer 102 may also collect data from the POS terminals 104, 106 and 108, thereby aggregating information about the processes that each POS terminal performs. For example, each POS terminal may measure its own activity rate, and transmit to the server computer 102 signals indicative of the measured activity rate. The server computer 102 may then determine an overall activity rate for the network 100 of POS terminals.

The measured activity rate may be, for example, the number of POS terminals in use (processing transactions) or the percentage of POS terminals in use. Based on the activity rate, the server computer 102 may determine whether to permit the supplementary process to be performed at each POS terminal. Alternatively, the server computer 102 may determine which of the POS terminals are to perform the supplementary process.

FIG. 7 shows a table 120 that illustrates an offer schedule for a network of POS terminals. Each row of the table 120 represents an entry, and each entry defines an upsell to offer for an activity rate. The activity rate used in the table 120 is based on which of a plurality of terminals are in use. Each entry includes an activity rate identifier 122 that uniquely identifies the entry, an activity rate 124 which describes a rate or range of rates, and an upsell to offer 126 at that activity rate. For example, the entry 128, corresponding to less than 50% of all POS terminals in use, indicates that three products are to be offered, and the customer is to choose one. The entries 130, 132 and 134 similarly describe upsells to be offered for different activity rates. As described above, more time-consuming upsells such as multiple upsells offered one after the other may be offered during periods of lower activity.

Although the present invention has been described with respect to a preferred embodiment thereof, those skilled in the art will note that various substitutions may be made to those embodiments described herein without departing from the spirit and scope of the present invention.

What is claimed is:

1. A method for controlling the performance of a supplementary process at a point-of-sale terminal, comprising:

measuring an activity rate of a point-of-sale terminal; and

performing a supplementary process in accordance with the activity rate.

2. The method of claim 1, in which the step of performing a supplementary process comprises:

disabling a system for providing a supplementary process if the activity rate is greater than a predetermined threshold.

3. The method of claim 1, in which the step of performing a supplementary process comprises:

enabling a system for providing a supplementary process if the activity rate is less than a predetermined threshold.

4. The method of claim 1, further comprising:

determining a predetermined threshold in dependence on a signal indicative of time of day.

5. An apparatus for controlling the performance of a supplementary process at a point-of-sale terminal, comprising:

a storage device; and

a processor connected to the storage device,

the storage device storing a program for controlling the processor; and

the processor operative with the program to:

measure an activity rate of a point-of-sale terminal; and

perform a supplementary process in accordance with the activity rate.

6. The apparatus of claim 5, in which the processor is further operative with the program to:

disable a system for providing a supplementary process if the activity rate is greater than a predetermined threshold.

7. The apparatus of claim 5, in which the processor is further operative with the program to:

enable a system for providing a supplementary process if the activity rate is less than a predetermined threshold.

8. The apparatus of claim 5, in which the processor is further operative to:

determine a predetermined threshold in dependence on a signal indicative of time of day.

9. A method for controlling the performance of a supplementary process at a point-of-sale terminal, comprising:

measuring an activity rate of a point-of-sale terminal;

providing a supplementary product offer in accordance with the activity rate and an offer schedule.

10. The method of claim 9, in which the offer schedule comprises a set of supplementary product offers, each supplementary product offer corresponding to a predetermined range of activity rates.

11. The method of claim 10, in which successively time-consuming supplementary product offers correspond to successively greater ranges of activity rates.

12. An apparatus for controlling the performance of a supplementary process at a point-of-sale terminal, comprising:

a storage device; and

a processor connected to the storage device,

the storage device storing a program for controlling the processor; and

the processor operative with the program to:

measure an activity rate of a point-of-sale terminal; and

provide a supplementary product offer in accordance with the activity rate and an offer schedule.

13. The apparatus of claim 12, in which the offer schedule comprises a set of supplementary product offers, each supplementary product offer corresponding to a predetermined range of activity rates.

14. The apparatus of claim 13, in which successively time-consuming supplementary product offers correspond to successively greater ranges of activity rates.

15. A method for controlling the performance of a supplementary process at a point-of-sale terminal, comprising:

measuring a criterion;

determining, based on the criterion, whether to disable a system for providing a supplementary process; and

disabling the system for providing a supplementary process.

16. An apparatus for controlling the performance of a supplementary process at a point-of-sale terminal, comprising:

a storage device; and

a processor connected to the storage device, the storage device storing a program for controlling the processor; and

the processor operative with the program to:

measure a criterion;

determine, based on the criterion, whether to disable a system for providing a supplementary process; and

disable the system for providing a supplementary process.

17. A method for controlling the performance of a supplementary process at a point-of-sale terminal, comprising:

measuring a criterion;

determining, based on the criterion, whether to enable a system for providing a supplementary process; and

enabling the system for providing a supplementary process.

18. An apparatus for controlling the performance of a supplementary process at a point-of-sale terminal, comprising:

a storage device; and

a processor connected to the storage device, the storage device storing a program for controlling the processor; and

the processor operative with the program to:

measure a criterion;

determine, based on the criterion, whether to enable a system for providing a supplementary process; and

enable the system for providing a supplementary process.

19. A method for controlling the performance of a supplementary process at a point-of-sale terminal, comprising:

measuring an activity rate of a plurality of point-of-sale terminals;

determining, based on the activity rate, whether to perform a supplementary process; and

performing the supplementary process for at least one point-of-sale terminal.

20. The method of claim 19, in which the step of performing the supplementary process comprises:

performing the supplementary process for each point-of-sale terminal.

21. An apparatus for controlling the performance of a supplementary process at a point-of-sale terminal, comprising:

a storage device; and

a processor connected to the storage device,

the storage device storing a program for controlling the processor; and

the processor operative with the program to:

measure an activity rate of a plurality of point-of-sale terminals;

determine, based on the activity rate, whether to perform a supplementary process; and

perform the supplementary process for at least one point-of-sale terminal.

22. The apparatus of claim 21, in which the processor is further operative with the program to:

perform the supplementary process for each point-of-sale terminal.

23. A method for controlling the performance of a supplementary process at a point-of-sale terminal, comprising:

measuring an activity rate of a plurality of point-of-sale terminals;

determining, based on the activity rate, whether to disable a system for providing a supplementary process; and

disabling a system for providing a supplementary process for each of a plurality of point-of-sale terminals.

24. An apparatus for controlling the performance of a supplementary process at a point-of-sale terminal, comprising:

a storage device; and

a processor connected to the storage device,

the storage device storing a program for controlling the processor; and

the processor operative with the program to:

measure an activity rate of a plurality of point-of-sale terminals;

determine, based on the activity rate, whether to disable a system for providing a supplementary process; and

disable a system for providing a supplementary process for each of a plurality of point-of-sale terminals.

25. A method for controlling the performance of a supplementary process at a point-of-sale terminal, comprising:

measuring an activity rate of a point-of-sale terminal; and

if the activity rate is less than a predetermined threshold,

determining an upsell in dependence on a purchase,

determining an upsell price in dependence on the purchase, and

offering to exchange the upsell price for the upsell.

26. An apparatus for controlling the performance of a supplementary process at a point-of-sale terminal, comprising:

a storage device; and

a processor connected to the storage device,

the storage device storing a program for controlling the processor; and

the processor operative with the program to:

measure an activity rate of a point-of-sale terminal; and

if the activity rate is less than a predetermined threshold,

determine an upsell in dependence on a purchase,

determine an upsell price in dependence on the purchase, and

offer to exchange the upsell price for the upsell.

27. A method for controlling the performance of a supplementary process at a point-of-sale terminal, comprising:

receiving an override signal; and

performing a supplementary process in accordance with the override signal.

28. The method of claim 27, in which the step of performing comprises:

disabling a system for providing a supplementary process if the override signal does not indicate performance of the supplemental process.

29. The method of claim 27, in which the step of performing comprises:

enabling a system for providing a supplementary process if the override signal indicates performance of the supplemental process.

30. An apparatus for controlling the performance of a supplementary process at a point-of-sale terminal, comprising:

a storage device; and

a processor connected to the storage device,

the storage device storing a program for controlling the processor; and

the processor operative with the program to:

receive an override signal; and

perform a supplementary process in accordance with the override signal.

31. The apparatus of claim 30, in which the processor is further operative with the program to:

disable a system for providing a supplementary process if the override signal does not indicate performance of the supplemental process.

32. The apparatus of claim 30, in which the processor is further operative with the program to:

enable a system for providing a supplementary process if the override signal indicates performance of the supplemental process.

33. A method for controlling the performance of a supplementary process at a point-of-sale terminal, comprising:

receiving an override signal; and

if the override signal indicates performance of a supplemental process,

determining an upsell in dependence on a purchase,

determining an upsell price in dependence on the purchase, and

offering to exchange the upsell price for the upsell.

34. An apparatus for controlling the performance of a supplementary process at a point-of-sale terminal, comprising:

a storage device; and

a processor connected to the storage device,

the storage device storing a program for controlling the processor; and

the processor operative with the program to:

receive an override signal; and

if the override signal indicates performance of a supplemental process,

determine an upsell in dependence on a purchase,

determine an upsell price in dependence on the purchase, and

offer to exchange the upsell price for the upsell.

35. A method for controlling the performance of a supplementary process at a point-of-sale terminal, comprising:

measuring an activity rate of a point-of-sale terminal; and

if the activity rate is below a first predetermined threshold, offering a first upsell having an first offer speed; and

if the activity rate is above a second predetermined threshold, offering a second upsell having a second offer speed greater than the first offer speed.

36. An apparatus for controlling the performance of a supplementary process at a point-of-sale terminal, comprising:

a storage device; and

a processor connected to the storage device,

the storage device storing a program for controlling the processor; and

the processor operative with the program to:

measure an activity rate of a point-of-sale terminal; and

if the activity rate is below a first predetermined threshold,

offer a first upsell having an first offer speed; and

if the activity rate is above a second predetermined threshold,

offer a second upsell having a second offer speed greater than the first offer speed.

ABSTRACT OF THE DISCLOSURE

A POS terminal measures one or more criteria, such as the activity rate of the POS terminal. For example, the POS terminal may measure the number of completed transactions per time, the number of items purchased through the POS terminal per time, the number of upsells accepted by customers per time, the number of customers in a store or the number of customers in the vicinity of the POS terminal. The POS terminal in turn compares the measured criteria with a predetermined threshold. Based on the results of the comparison, the POS terminal determines whether to perform a supplementary process. For example, the POS terminal may perform the supplementary process only if the number of transactions per minute is less than a predetermined threshold.

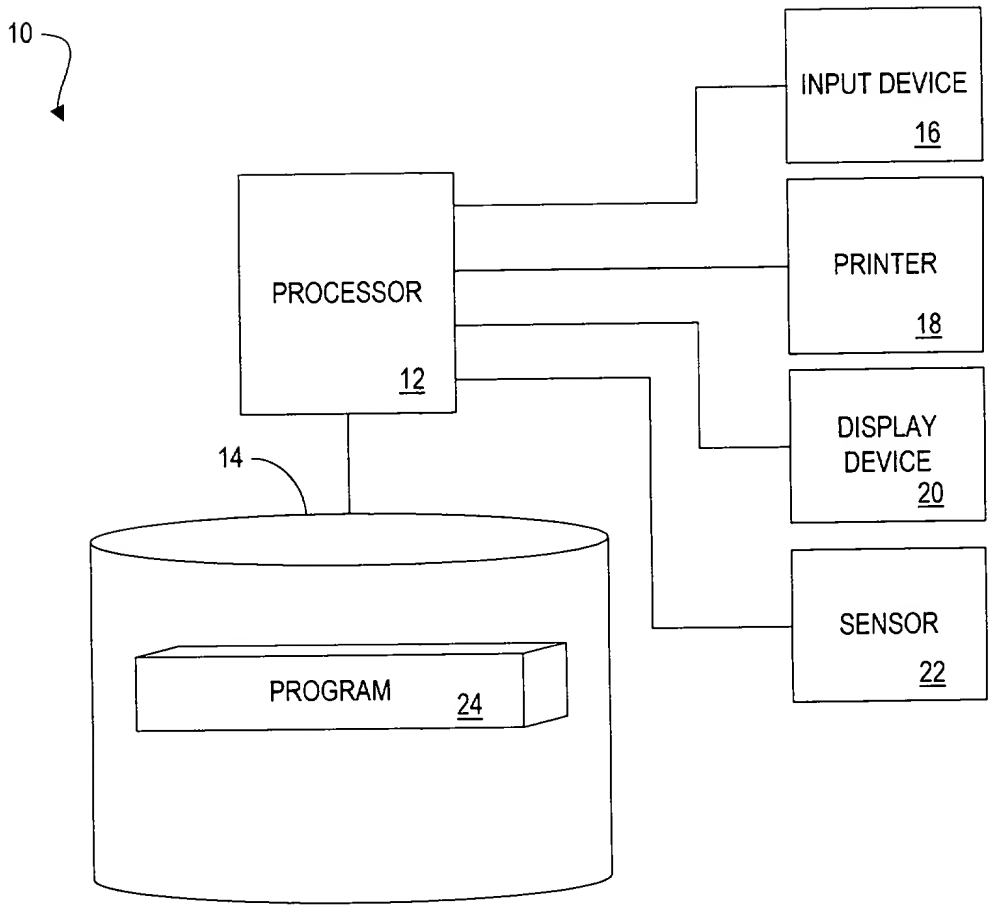
10
INPUT DEVICE
16
PROCESSOR
12
PRINTER
18
DISPLAY
DEVICE
20
14
SENSOR
22
PROGRAM
24

FIG. 1

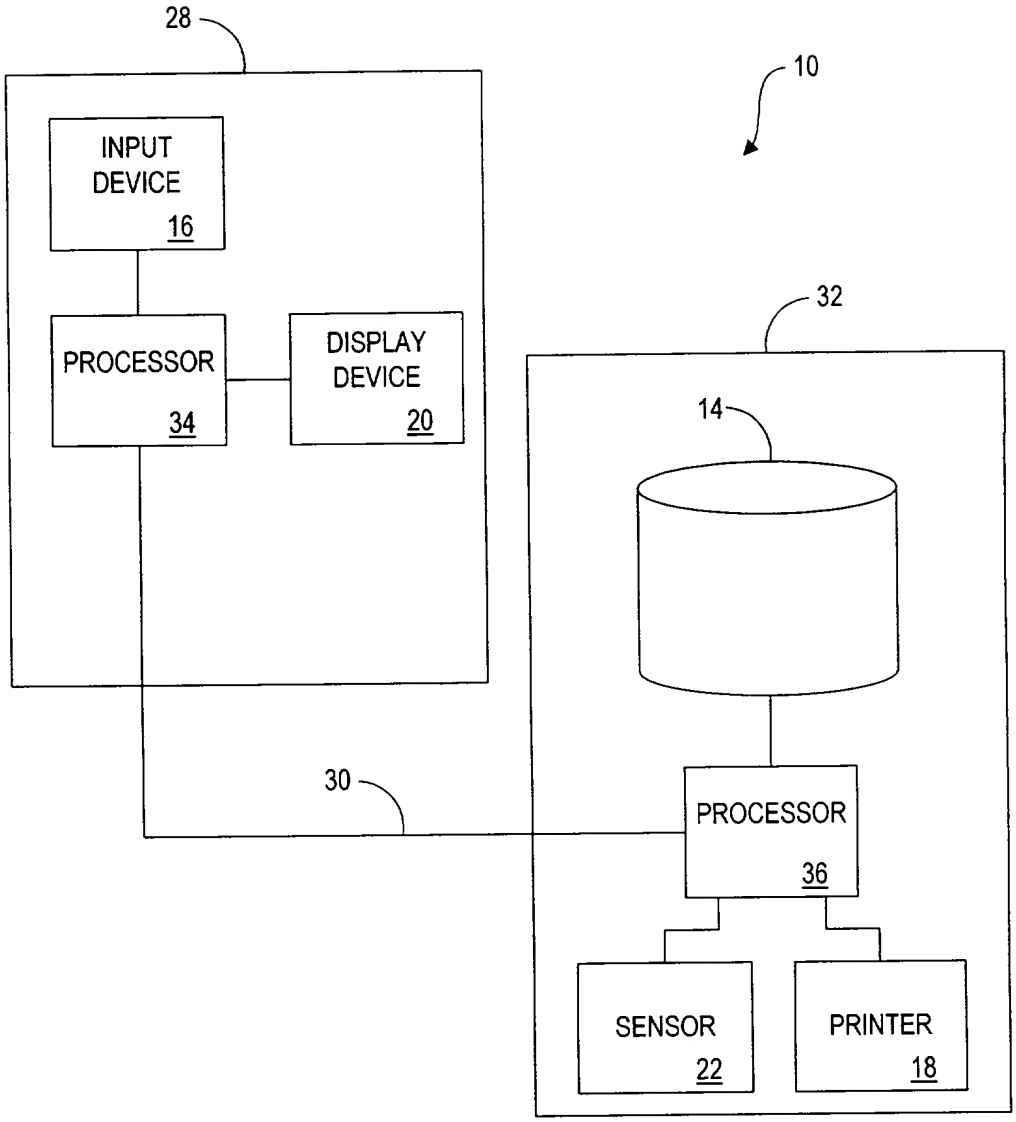
28
10
INPUT DEVICE 16
PROCESSOR 34
DISPLAY DEVICE 20
32
14
30
PROCESSOR 36
SENSOR 22
PRINTER 18

FIG. 2

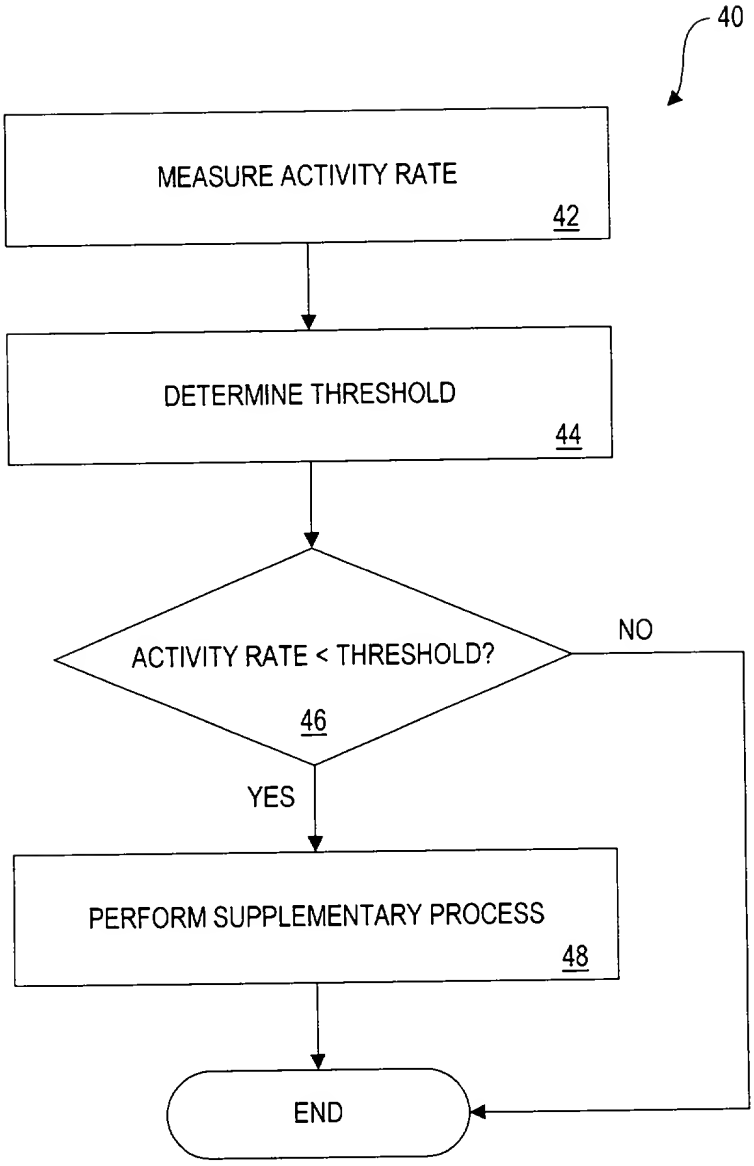
40
MEASURE ACTIVITY RATE
42
DETERMINE THRESHOLD
44
ACTIVITY RATE < THRESHOLD?
46
NO
YES
PERFORM SUPPLEMENTARY PROCESS
48
END

FIG. 3

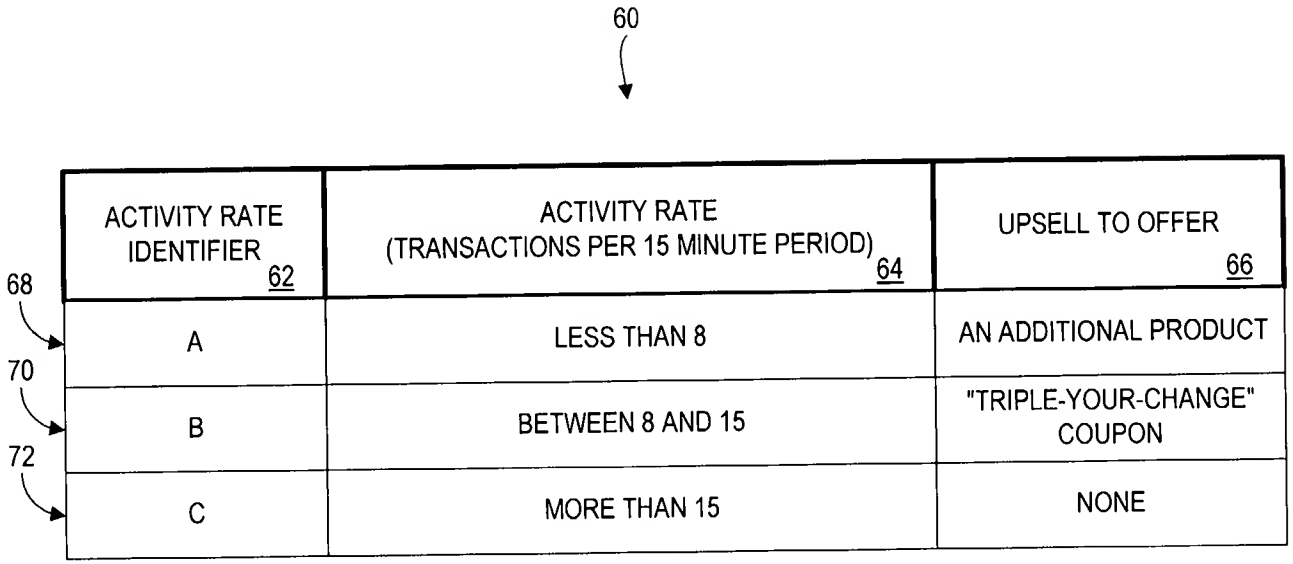

FIG. 4

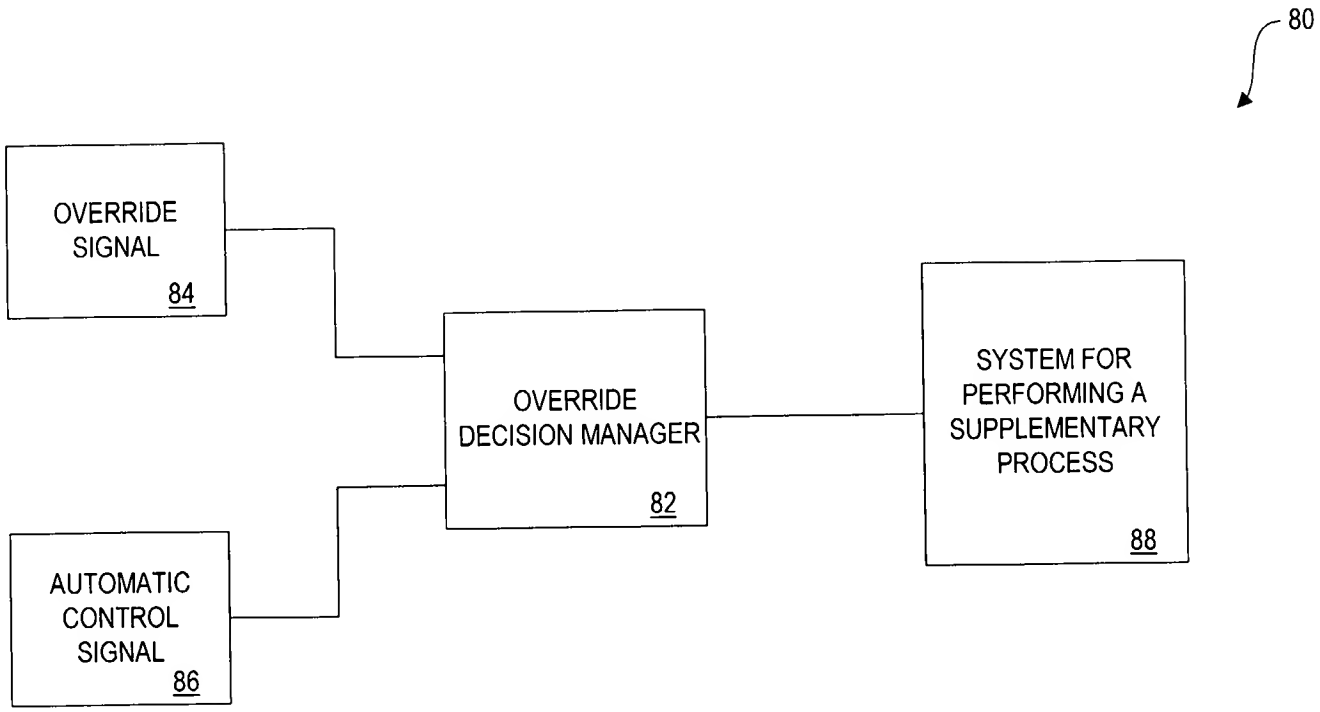

FIG. 5

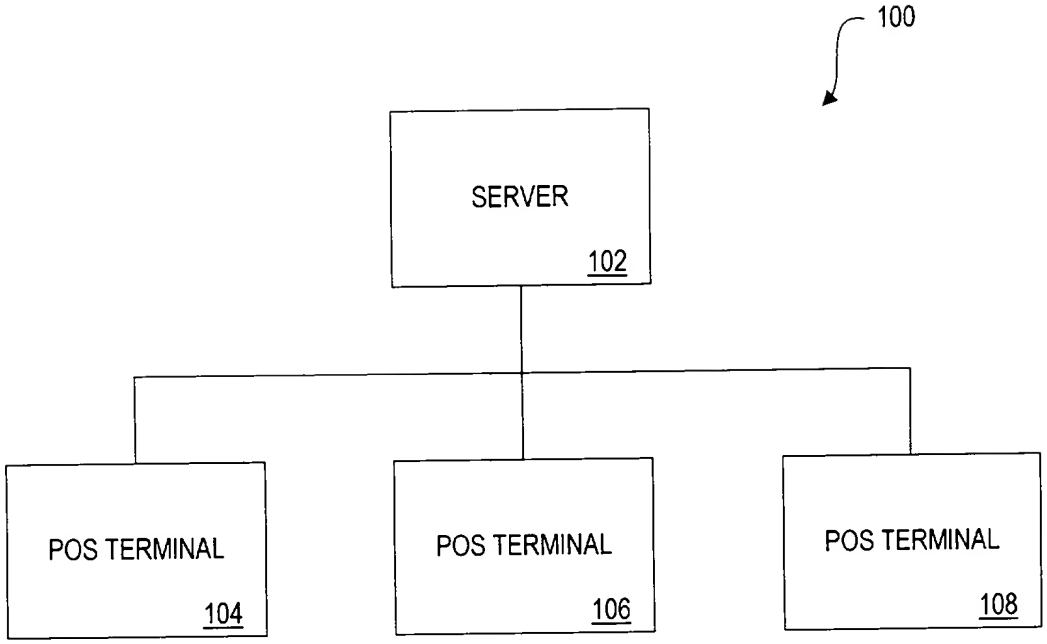
100
SERVER
102
POS TERMINAL
104
POS TERMINAL
106
POS TERMINAL
108

FIG. 6

120

	ACTIVITY RATE IDENTIFIER 122	ACTIVITY RATE (% ALL POS TERMINALS IN USE) 124	UPSELL TO OFFER 126
128	A	LESS THAN 50%	ONE FROM A GROUP OF THREE ADDITIONAL PRODUCTS
130	B	BETWEEN 50% AND 80%	AN ADDITIONAL PRODUCT
132	C	BETWEEN 81% AND 90%	"TRIPLE-YOUR-CHANGE" COUPON
134	D	MORE THAN 90%	NONE

FIG. 7

COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship is as stated below next to my name(s),

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

METHOD AND APPARATUS FOR CONTROLLING THE PERFORMANCE OF A SUPPLEMENTAL PROCESS AT A POINT-OF-SALE TERMINAL

the specification of which (*check one*)

☒ is attached hereto; or

☐ was filed on _____ as application serial no. _____ and was amended on _____ (if applicable); or

☐ was described and claimed in international application no. _____ filed on _____ and as amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above, and that it contains a full, clear, concise and exact description of the subject matter for which a patent is sought.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, § 1.56(a).

Prior Application(s)

☐ (Check if applicable) I hereby claim foreign priority benefits under Title 35, United States Code § 119, by checking the box(es) below, any foreign application(s) for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

(Number)	(Country)	(Day/month/year filed)	Priority Claimed?
			☐ yes ☐ no
			☐ yes ☐ no

☐ (Check if applicable) I hereby claim the benefit under Title 35, United States Code § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code § 112, I acknowledge the duty to disclose material information as defined in the Title 37, Code of Federal Regulations § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of the application:

Prior U.S. Application(s)

(Application Number)	(Day/month/year filed)	(Status – Issued, pending, abandoned)
08/920,116	26 August 1997	Pending
08/822,709	21 March 1997	Pending
08/841,791	5 May 1997	Pending

❑ (Check if applicable) In this continuation-in-part application, insofar as the subject matter of any of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code § 112, I acknowledge the duty to disclose material information as defined in the Title 37, Code of Federal Regulations § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of the application.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge and the like so made are punishable by fine or imprisonment, or both under § 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

I hereby appoint Jeffrey L. Brandt - Reg. No. 31,490, Robert R. Lech – Reg. No. 37,169 and Dean Alderucci – Reg. No. 40,484 as my attorneys and Charles A. Rattner - Reg. No. 40,136 as agent of record, all of Walker Digital Corporation, whose address is Five High Ridge Park, Stamford, Connecticut 06905-1326 with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith.

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Wherefore I pray that Letters Patent be granted to me for the invention or discovery described and claimed in the foregoing specification and claims, and I hereby subscribe my name to the foregoing specification and claims, declaration, power of attorney, and this petition.

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Post Office Address: same as above
Citizenship: U.S.A.
Inventor's signature_____ Date_____, 1998

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Residence: 13-2a Clarmore Drive, Norwalk, CT 06850
Post Office Address: same as above
Citizenship: U.S.A.
Inventor's signature_____ Date_____, 1998

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Residence: 19-8Prospect Ridge Road, Ridgefield, CT 06877
Post Office Address: same as above
Citizenship: U.S.A.
Inventor's signature_____ Date_____, 1998

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Application of	)	
	)	
Jay S. WALKER, Andrew S. VAN LUCHENE and Dean ALDERUCCI	)	
	)	Examiner: To be assigned
for METHOD AND APPARATUS FOR CONTROLLING THE PERFORMANCE OF A SUPPLEMENTAL PROCESS AT A POINT-OF-SALE TERMINAL	)	
	)	Group Art Unit: To be assigned
Serial No.: To be assigned	)	
Filed: March 20, 1998	)	WD Docket No.: WD2-97-557

CERTIFICATE UNDER 37 CFR 1.10 OF MAILING BY "EXPRESS MAIL"

EM566048679US	March 20, 1998
"Express Mail" label number	Date of Deposit

I hereby certify that the attached papers or fees:

Transmittal Letter
Patent Application (20 pages)
Formal Drawings (7 sheets – Figs. 1-7)
Combined Declaration and Power of Attorney (unexecuted)
Postcard

are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Charles Rattner (PTO Reg. No. 40,136)
(Typed or printed name of person mailing papers or fees)

(Signature of person mailing papers or fees)